To: Scott Tomashefsky
From: "Edan Prabhu" <edanprabhu@cox.net>
Subject: Comments on Strategic Plan
CC:
Date Sent: Thursday, March 21, 2002 10:26 AM

Dear Scott:

Thank you for the opportunity to comment on the California Energy Commission's Strategic Plan for Distributed Generation. I believe that the Commission has shown great foresight and leadership in promoting DG and has done so in an open, forthright manner. The strategic plan draft is well thought out and I look forward to its implementation.

My comments are intended to enhance an already excellent effort. The comments are presented as a markup of the Strategic Plan such that you will be better able to gauge their relevance.

The main points of the comments are:

a.. Emphasis on standardizing and certifying DG interconnection systems
b.. Allowing all parties, including Utilities, equal opportunities in developing DG
c.. Incentives to Utilities to accept DG in lieu of Utilities collecting exit fees as a result of DG
d.. R&D to resolve key challenges
e.. Establishing mechanisms that allow translation of all benefits to cash
f.. Interim subsidies that are replaced by market mechanisms for value provided
g.. Support for DG from renewables and waste

My comments are made as an individual. Thanks again for the opportunity to comment.

Regards,

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Draft Outline
Strategic Plan for Distributed Generation
(As of 2/20/02 12:00 pm)

I. Purpose and Scope of Distributed Generation Strategic Plan

A. Articulate the Energy Commission's vision of the future relating to distributed generation.
B. Identify issues and opportunities affecting the likelihood of the vision being realized.
C. Recommend policies and strategies that will address the issues and opportunities that will make the Energy Commission's vision a reality.
D. Provide guidance to other state agencies about policies and strategies within their respective jurisdictions that would contribute to realizing the vision.

II. Vision, Mission and Principles

Vision Statement	Distributed generation will be an integral part of the California energy system, providing consumers and energy providers with affordable, clean, reliable, and readily accessible energy services.
Mission Statement	It is the mission of the Energy Commission to develop programs and policies that will effectively promote and deploy distributed generation technologies that benefit energy consumers and the electricity grid in California.
Principles	Deploy distributed generation only in a way that preserves and enhances the environment in which people live. Recognize the need for private investment. Without private investment, a self-sufficient distributed generation industry will never develop. Provide consumers more choices about how to meet their energy needs, including opportunities to gain more control over energy use and expense. Move towards standardized, certified systems that will be quick to install. Create equitable incentives for key stakeholders.

III. DG Overview: Technologies and Markets

A. Definition

Distributed generation has been defined in many ways, creating some confusion in terms of rule applicability. It is generally defined as the generation of electricity near the intended place of use. ~~Some parties define it with size limitations, others exclude backup generation, and yet others make no distinction between generation connected to the transmission system and generation connected to the distribution system.~~ The Strategic Plan will assume the following definition, consistent with the CPUC's definition identified in its DG roadmap decision:

> Distributed generation is "small scale electric generating technologies such as internal combustion engines, microturbines, wind turbines, photovoltaics, and fuel cells." *CPUC Decision 99-10-065, September 1999*.

B. Technology Overview

This section will provide a brief description of each technology classified as distributed generation. Technologies to be addressed include but are not limited to:
Photovoltaics and Other Solar Electric Technologies
Wind Turbines
Fuel Cells
Microturbines and Small Gas Turbines
Stirling Engines
Reciprocating Engines
Miscellaneous Storage Technologies
C. Status of DG in California
1. Installations
Distributed generation is not new to California nor is it insignificant in terms of its impact. In California, more than 1,000 generating facilities sized between 100 kilowatts and 20 megawatts produce electricity, representing more than 3,200 MW or six percent of the State's 1999 peak. ~~Many of the generators are technologically grouped as internal combustion based, with individual units often producing in excess of one megawatt.~~ In addition, there are thousands of ~~Include~~ units smaller than 100 kilowatts such as microturbines, photovoltaics, and other renewable technologies, often consuming waste or running on free fuel.~~, and the estimate increases further~~. This section will describe where distributed generation is located throughout California, disaggregated by utility service territory and technology where available.
2. DG Enterprises
This section will address the status of DG businesses in California, including the number of manufacturers and DG-related service providers.

IV. Deployment Issues and Opportunities

This section will identify the major barriers hindering the deployment of distributed generation in California. The issues listed in this outline are not all-inclusive. Although listed below, it is not the intent of the Plan to address each issue individually. These issues will be prioritized and addressed to the extent possible. It should be noted that many of the issues were conceived as part of the Energy Commission's PIER Research Assessment work performed last year under the direction of the Energy Systems Integration program.
A. Interconnection Issues

- Can interconnection rules be standardized throughout California?
- Should California support development of national interconnection standards?
- Can interconnection be made more user-friendly to the end-use consumer?
- Can a substantial amount of DG be interconnected in both radial and networked distribution systems?
- Are there safe, reliable and cost-effective interconnection solutions for radial and networked distribution systems?
- Can interconnection solutions be deployed in a timely manner?
- Is a single DG unit compatible with end-use equipment or other DG equipment?
- Can qualified interconnection systems be certified so that they may be installed with minimal field-testing?

B. Environmental Issues

- ~~Should the state give~~What ~~-~~ preferences should be given to "clean" DG technologies?
- Should the incentives for renewables be further enhanced?
- Can air emissions from DG become as clean as central station power plants by 2007?
- Can air emissions from diesel backup generators become as clean as natural gas-fired generators?
- How best to promote waste-to-energy DG projects that help improve the air and water quality and reduce greenhouse gases

C. Grid Effects Issues

- What are the ~~Would a high penetration of DG have a~~ beneficial/detrimental impacts of high-penetration DG on the T&D system and how may they be quantified and assessed for value?
- ~~Is there~~ What are the ~~a~~ limits to the level of DG that the grid can absorb without adverse impacts?
- ~~Are there any~~What are the limitations on bi-directional power?
- Should the design of new distribution feeders ~~design philosophy and design tools be modified to accommodate~~consider potential DG that may be added later?
- Can engineering studies for interconnections be eliminated, standardized, or streamlined?
- Can the concept of microgrids be made practical? Can they be effectively utilized?

D. Market Integration and Regulatory Issues

- ~~Can~~ How should market rules be modified to allow DG to better participate in current markets?
- ~~Can~~ How may transaction costs associated with interconnecting and permitting be reduced?
- Is it in the State's interest to promote DG?
- How can tariffs and rate be designed to provide better price transparency to DG?
- Are there too many public subsidies being provided for DG?
- Should a separate market structure be created for the full range of DG technologies (i.e., DG aggregation, DG Power Exchange, etc.)?
- Should regulatory rules be changed to support the development of microgrids?
- Does the suspension of direct access impact the marketability of DG?
- Are there ways to balance the ~~Does the~~ imposition of "exit fees" ~~impact~~ with the marketability of DG? Can Utilities be offered incentives in return for eliminating exit fees when DG is installed on their systems
- Should standards for control/communications be developed to better enable DG to participate in markets?
- Should the DG market paradigm shift towards decentralized rather than centralized control?
- Should Utilities be incentivized to facilitate DG
- Should Utilities be allowed to install and use DG, participate with other DG developers, and how?
- Are there market benefits to aggregating DG

V. Potential Role of Government in Addressing Issues and Opportunities

A. Overview of Potential Roles

- Plan/Coordinate
- R&D to move key areas forward
- Purchases of DG systems, or of electrical power generated, especially from renewables or waste
- Incent
- Regulate
- Educate
- Be Entrepreneurial

B. ~~Distinguishing Between~~Identifying Federal and State Government Roles and means to coordinate between them

C. Role of State Agencies

D. Role of Local Governments

E. Participation of Municipal Utilities, Coops, Water Resources Agencies, Power Authorities in standardizing and simplifying DG rules

VI. Guidance to Other State Agencies

While it is clear that the Energy Commission does not have jurisdictional authority over other state agencies involved in distributed generation, a myriad of advantages are available to the state with a coordinated effort. This section attempts to identify those areas, which will include input based on discussions between Energy Commission staff and representatives from other state agencies. Agencies the Energy Commission seeks to consult include but are not limited to the following:

California Air Resources Board
California Public Utilities Commission
California Consumer Power and Financial Authority
Department of General Services
Employment Development Department
State Treasurer's Office (other financial authorities)

VII. Strategy Options and Goals for the Energy Commission

This section represents the heart of the Energy Commission strategic plan, outlining the general strategies and goals for the near-term, mid-term, and long-term.

A. General Strategies

1. Leadership Opportunities

~~Technical and Policy Analyses~~Help create a framework that fosters rapid deployment of clean and renewable DG by providing incentives to all key stakeholders. Set up the framework such that market value paid out for benefits replace incentives in future.

Help create regulations that provide incentives to Utilities for using, accepting ans supporting DG

R&D Funding to overcome critical bottlenecks

Renewables Funding

Incorporate DG into Building Standards

Help identify locally available energy sources that may be tapped by DG

Act as honest broker in setting up standards, rules, certifications, and other DG facilitation tools.

Information Source
Coordinate Activities Across State Agencies

2. Collaboration Opportunities
Work with CPUC on regulatory issues and policy development
Work with CPA on financing arrangements
Co-fund with DOE and other entities to optimize research efforts.

B. Goals and Strategies

Long-term (Beyond 10 Years):

Make California's energy generation and delivery system the cleanest, most efficient, reliable, and affordable in the nation by maximizing appropriate use of distributed generation. By 2020, 20 percent of all new generation will be DG.

Mid-term (5-10 Years):

Reduce distributed generation equipment costs to a level that would obviate the need to provide government incentives to deploy distributed generation.

Enhance the emissions and efficiency profiles of distributed generation technologies such that the economics and permitting support wide-scale deployment.

Establish markets that pay for the full value of DG, including grid benefits, environmental benefits, greenhouse gas reduction credits, energy conservation and waste reduction benefits

Certification and Deployment of DG systems to be as routine as refrigerators

Near-term (3-5 Years):

Fund research programs that will assist in the development and deployment of distributed generation technologies.

Undertake a series of analyses to determine market, technological, and regional potential for distributed generation in California.

Address institutional and regulatory issues that interfere with purchasing, installation, and operation of distributed generation facilities.

Create regulations designed to eliminate the sometimes confrontational relationships between Utilities and DG developers

Provide incentives that encourage the deployment of distributed generation, with additional incentives afforded to "environmentally preferred" technologies.

Establish a DG State Agency Coordination Group to cooperatively address distributed generation issues and ensure consistent handling of these issues throughout state government.

Cross-pollinate with federal programs that support the deployment of DG

Raise consumer awareness about distributed generation.